

## CLAIMS

What is claimed is:

1. A controlled-object model generation method for generating a model of a controlled object, the method comprising the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto; and

generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum.

2. A controlled-object model generation program used for realization of a controlled-object model generation method, the program causing a computer to execute the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto; and

generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of

controlled variables corresponding thereto or a value derived from the error becomes optimum.

3. A controlled-object model generation method for generating a model of a controlled object, the method comprising the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto;

acquiring time series data of values which is outputted from each of transfer functions assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum; and

selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error.

4. A controlled-object model generation program used for realization of a controlled-object model generation method, the program causing a computer to execute the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto;

acquiring time series data of values which is outputted from each of transfer functions assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values

and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum; and

selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error.

5. A control parameter adjustment method for adjusting control parameters of a controller, the method comprising the steps of:

generating a model of a controlled object according to a controlled-object model generation process for generating a model of a controlled object;

in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm; and

creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm,

wherein the predetermined controlled-object model generation process further comprises:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto; and

generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum.

6. A control parameter adjustment program used for realization of a control parameter adjustment method, the program causing a computer to execute the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto;

generating a model of the controlled object by acquiring time series data of values which is outputted from a transfer function assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum;

in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm; and

creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm.

7. A control parameter adjustment method for adjusting control parameters of a controller, the method comprising the steps of:

generating a model of a controlled object according to a controlled-object model generation process for generating a model of a controlled object;

in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm; and

creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm,

wherein the controlled-object model generation process further comprises:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto;

acquiring time series data of values which is outputted from each of transfer functions assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum; and

selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error.

8. A control parameter adjustment program used for realization of a control parameter adjustment method, the program causing a computer to execute the steps of:

acquiring time series data of manipulated variables given to a controlled object and time series data of controlled variables outputted by the controlled object in response thereto;

acquiring time series data of values which is outputted from each of transfer functions assumed in advance when the acquired time series data of manipulated variables is inputted to the transfer function, and identifying one or more parameters of the transfer function so that an error between the time series data of output values

and the acquired time series data of controlled variables corresponding thereto or a value derived from the error becomes optimum;

selecting, from the plurality of transfer functions having the identified parameters, the optimum one as a model of a controlled object based on the error acquired when the identification is completed or the value derived from the error;

in order to adjust a control algorithm of the controller, adjusting control parameters of the control algorithm; and

creating and outputting data showing relationship among a desired controlled variable, a manipulated variable and a controlled variable by simulating the state when the controller with the adjusted control parameters controls the controlled object with the use of the controlled-object model and the control algorithm.